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09/134,478	08/14/1998	TAKAFUMI NOGUCHI	2091-0162P	8041

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EXAMINER

ROSENDALE, MATTHEW L

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 07/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/134,478

Applicant(s)

NOGUCHI, TAKAFUMI

Examiner

Matthew L Rosendale

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 1998 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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1. Claims 1, 5, 6, and 13 – 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim.

Referring to claim 1, Kim discloses a method of brightness adjustment where each acquired pixel is expressed as red, green, and blue component values and a histogram is computed for the luminous value of each pixel in the image data. A correction value for the luminous signal of each pixel is calculated and is applied to the three RGB pixel components (Col. 8, Lines 41 – 57).

2. Referring to claim 5, Kim discloses that the image acquisition device in figure 5 acquires a digital image and applies the luminous adjustment to the image signal as a digital value (Col. 8, Lines 41 – 57).

3. Referring to claim 6, Kim discloses that the pixel value is expressed in the linear scale being that the correction value for the brightness adjustment is applied to the red, green, and blue components by multiplying the R, G, and B value by the correction value  $k$  or  $Y'/Y$  (Col. 7, Lines 24 – 61).

4. Referring to claim 13, Kim discloses an image processor in figure 5 comprising, a data acquisition means for accepting image data as a digital signal expressing as a set of three components (R G B), a brightness analyzing means 100 and 200 for extracting the luminous signal from the image data and computing a histogram of the brightness, and a data

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transformation means 300 for applying the luminous correction factor  $Y'/Y$  or  $k$  to each component (R G B) of the image data (Col. 8, Lines 41 – 57).

5. Referring to claim 14, Kim discloses that the pixel value is expressed in the linear scale being that the correction value for the brightness adjustment is applied to the red, green, and blue components by multiplying the R, G, and B value by the correction value  $k$  or  $Y'/Y$  (Col. 7, Lines 24 – 61).

6. Referring to claim 15, Kim discloses that the pixel values can be expressed logarithmically shown in figure 4 and calculated by adding the luminous correction value  $K$  to the red, green, and blue color components to correct the exposure value (Col. 8, Lines 13 – 28 and Col. 10, Lines 21 – 34).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim.

Referring to claim 9, Kim discloses a brightness adjustment device that extracts the luminance signal 100 from the red, green, and blue components of an image and computes a

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histogram of the luminance data and calculates a brightness correction  $Y'/Y$  or  $k$  for correcting the exposure value of a captured image 300 at the time of photography (Col. 8, Lines 41 – 57).

Kim does not disclose a source for the RGB video signal used in the brightness adjustment device discussed above. Official notice is taken that image pickup devices that output an RGB video signal are well known to one of ordinary skill in the art and would have been obvious to use with the brightness adjustment device of Kim to provide a video signal for the brightness adjustment device of figure 5.

8. Referring to claim 10, Kim discloses that the pixel value is expressed in the linear scale being that the correction value for the brightness adjustment is applied to the red, green, and blue components by multiplying the R, G, and B value by the correction value  $k$  or  $Y'/Y$  (Col. 7, Lines 24 – 61).

9. Claims 2 – 4, 7, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Komiya.

Referring to claim 2, Kim discloses a brightness adjustment device that receives a digital image in the form of red, green, and blue color components shown in figure 5. Kim does not disclose that the brightness adjustment apparatus is in a digital camera.

Komiya discloses a digital camera in figure 1 capable of performing a brightness adjustment on an image signal by extracting the luminance signal component from the image data and converting the luminance  $Y$  into log-form along with the RGB components of the image data. After the dynamic range of the luminance is adjusted, it is added back to the RGB

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components thereby adjusting the brightness of the image data (Col. 1, Line 40 – Col. 2, Line 9).

Therefore it would have been obvious to use the brightness adjustment of Kim in the digital camera of Komiya because Komiya teaches that brightness adjustment can be performed in a digital camera.

10. Referring to claim 3, Kim discloses that the pixel value is expressed in the linear scale being that the correction value for the brightness adjustment is applied to the red, green, and blue components by multiplying the R, G, and B value by the correction value  $k$  or  $Y'/Y$  (Col. 7, Lines 24 – 61).

11. Referring to claim 4, Kim discloses that corrected pixels can be calculated by adding the luminous correction value  $K$  to the red, green, and blue color components to correct the exposure value but does not show a log converting means (Col. 8, Lines 13 – 28 and Col. 10, Lines 21 – 34). Komiya discloses a digital camera in figure 1 capable of performing a brightness adjustment on an image signal by extracting the luminance signal component from the image data and converting the luminance  $Y$  into log-form along with the RGB components of the image data. After the dynamic range of the luminance is adjusted, it is added back to the RGB components thereby adjusting the brightness of the image data (Col. 1, Line 40 – Col. 2, Line 9). Therefore it would have been obvious to use the log method of Komiya in place of the linear method of Kim as an alternative method of brightness adjustment.

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12. Referring to claim 7, Kim discloses that corrected pixels can be calculated by adding the luminous correction value K to the red, green, and blue color components to correct the exposure value but does not show a log converting means (Col. 8, Lines 13 – 28 and Col. 10, Lines 21 – 34). Komiya discloses a digital camera in figure 1 capable of performing a brightness adjustment on an image signal by extracting the luminance signal component from the image data and converting the luminance Y into log-form along with the RGB components of the image data. After the dynamic range of the luminance is adjusted, it is added back to the RGB components thereby adjusting the brightness of the image data (Col. 1, Line 40 – Col. 2, Line 9). Therefore it would have been obvious to use the log method of Komiya in place of the linear method of Kim as an alternative method of brightness adjustment. Also refer to the rejection of claim 5.

13. Referring to claim 11, Kim discloses that corrected pixels can be calculated by adding the luminous correction value K to the red, green, and blue color components to correct the exposure value but does not show a log converting means (Col. 8, Lines 13 – 28 and Col. 10, Lines 21 – 34). Komiya discloses a digital camera in figure 1 capable of performing a brightness adjustment on an image signal by extracting the luminance signal component from the image data and converting the luminance Y into log-form along with the RGB components of the image data. After the dynamic range of the luminance is adjusted, it is added back to the RGB components thereby adjusting the brightness of the image data (Col. 1, Line 40 – Col. 2, Line 9). Therefore it would have been obvious to use the log method of Komiya in place of the linear



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method of Kim as an alternative method of brightness adjustment. Also refer to the rejection of claim 9.

14. Claims 8, 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Nagasaka.

Referring to claim 8, Kim discloses a method of extracting the luminance from the red, green, and blue components of the image signal, but Kim's method assumes that the green component will always represent the brightness. Nagasaka discloses that the green component is generally almost proportional to the actual luminance value but in addition, Nagasaka also discloses a method of defining brightness as a maximum value of the red, green and blue color components (Col. 7, Lines 38 – 67).

Therefore it would have been obvious to use the luminance extraction method of Nagasaka with the brightness correction method of Kim because selecting the maximum luminance values from all the color signals will result in a more accurate offset value K calculation.

15. Referring to claim 12, Kim discloses a method of extracting the luminance from the red, green, and blue components of the image signal, but Kim's method assumes that the green component will always represent the brightness. Nagasaka discloses that the green component is generally almost proportional to the actual luminance value but in addition, Nagasaka also discloses a method of defining brightness as a maximum value of the red, green and blue color components (Col. 7, Lines 38 – 67).

Therefore it would have been obvious to use the luminance extraction method of Nagasaka with the brightness correction method of Kim because selecting the maximum luminance values from all the color signals will result in a more accurate offset value K calculation. Also refer to the rejection of claim 9.

16. Referring to claim 16, Kim discloses a method of extracting the luminance from the red, green, and blue components of the image signal, but Kim's method assumes that the green component will always represent the brightness. Nagasaka discloses that the green component is generally almost proportional to the actual luminance value but in addition, Nagasaka also discloses a method of defining brightness as a maximum value of the red, green and blue color components (Col. 7, Lines 38 – 67).

Therefore it would have been obvious to use the luminance extraction method of Nagasaka with the brightness correction method of Kim because selecting the maximum luminance values from all the color signals will result in a more accurate offset value K calculation.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ackermann discloses a method of video image processing where a digital signal is supplied to a histogram memory to generate a histogram to determine a brightness adjustment.

Kwon discloses a method of calculating brightness by the following equation:

$$\text{Brightness (Y)} = 0.6G + 0.3Y + 0.1B$$

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Sano discloses a maximum luminance-detecting unit but does not show the luminance is detected from the RGB color components.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew L Rosendale whose telephone number is (703) 305-4909. The examiner can normally be reached Monday - Thursday 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service whose telephone number is (703) 308-6789.

MLR  
July 1, 2002

  
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